

ENTOMOLOGY UPDATE

The most common pests and how to identify them

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Introduction

Plants are injured by insects as they feed, make homes, and lay eggs on and in plants. Often this injury damages the leaves, stems, and roots of plants. In many cases, the perpetrator of this injury will not be present on the plant when you arrive. Only symptoms or signs may remain. Like a crime scene investigator, you can use these clues to help identify the perpetrator. Accurate identification will enable you to design the right strategy for managing the pest in the most timely and efficacious way. This approach called "symptomatology" was first described for use in arboriculture by Carlton S. Koehler in the *Journal of Arboriculture*(1987).

Damage Symptom Categories and Damage Types

1. Chewed leaves or blossoms

- A. Defoliation- large caterpillars - gypsy moth, cankerworms, tent caterpillars, bagworm; sawflies - pine sawfly, birch sawfly
- B. Shot holes- small caterpillars, leaf beetles
- C. Margins notched- black vine weevil, twobanded Japanese weevil, Fuller rose beetle
- D. Skeletonization- elm leaf beetle, rose slug sawfly, Japanese beetle

2. Discolored leaves or blossoms

- A. Stippling - spider mites and eriophyiid mites (fine), lace bugs, plant bugs, leafhoppers (medium to course)
- B. Streaking - thrips
- C. Mining - boxwood leafminer, birch leafminer, locust leafminer and oak blotch leafminer (blotch mines); native holly leafminer (serpentine mine)
- D. Yellowing - aphids, whiteflies, mealybugs, armored scales

3. **Distorted leaves, branches, or trunks**
 - A. Leaf cupping - boxwood psyllid, aphids
 - B. Leaf or twig galling - gall wasps and flies
 - C. Bark rippling or cracking - moth and beetle borers - emerald ash borer, bronze birch borer
4. **Dieback of shoots, twigs, branches**
 - A. Shoot dieback - pine tip moth
 - B. Branch dieback - boring beetles and moths, twig girdler, twig pruner, root feeding beetle larvae, scale insects
5. **Products of insects**
 - A. Honey dew and sooty mold - aphids, soft scale insects, leafhoppers, tree hoppers, plant hoppers, whiteflies, psyllids, mealybugs
 - B. Fecal spots - lace bugs, thrips, some plant bugs, leaf beetles
 - C. Silk - tent caterpillars, webworms, leaf tiers
 - D. Protective cases composed of plant parts - bagworms, case bearers
 - E. Fluffy white wax - adelgids, mealybugs, some aphids, some whiteflies, some psyllids, some scale insect, some planthoppers
 - F. Soft or hard white, brown, gray to black wax covers - armored scale insects.
 - G. Spittle - spittlebugs
 - H. Pitch tubes - pine bark beetles
 - I. Pitch or gum masses, or sap flow - larvae of some moths, beetles and midges
 - J. Bark cracks containing frass (wood particles and feces)

Selected References:

- Johnson, W.T., and Lyon, H.H. 1988. Insects That Feed on Trees and Shrubs. Comstock Publishing Associates. Ithaca, NY 556 pp.
- Koehler, C. S. 1987. Symptomatology in the Instruction of Landscape Ornamentals Entomology. J. Arboric. 13: 78-80.